

ION SOURCE AND METHODS FOR MALDI MASS SPECTROMETRY

ABSTRACT OF THE DISCLOSURE

Provided are MALDI ion sources, methods of forming ions and mass analyzer systems. In various embodiments, provided are MALDI ion sources configured to irradiate a sample on a sample surface with a pulse of laser energy at angle within 10 degrees or less of the surface normal, and a first ion optics system configured to extract sample ions in a direction within 5 degrees or less of the surface normal. In various embodiments, MALDI ion sources having substantially coaxial sample irradiation and ion extraction are provided. In various embodiments, methods are provided, which produce sample ions by MALDI and extract sample ions using an accelerating electrical field to form an ion beam, such that, the angle of the trajectory at the exit from the accelerating electrical field of sample ions substantially at the center of the ion beam is substantially independent of sample ion mass.

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